DOCUMENT RESUME

ED 302 533 SP 030 803

AUTHOR Packard, Richard D.
TITLE Educational Change and Reform: Research & Evaluation. A Focused Design To Improve Teacher Development and Student Achievement for Enhanced School Effectiveness.
INSTITUTION Northern Arizona Univ., Flagstaff. Center for Excellence in Education.
PUB DATE 29 Nov 88
NOTE 39p.
PUB TYPE Reports - Descriptive (141)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Academic Achievement; Administrator Evaluation; *Career Ladders; Educational Policy; Elementary Secondary Education; Organizational Climate; *Program Development; *Program Evaluation; School Effectiveness; State Programs; *Teacher Effectiveness; Teacher Evaluation
IDENTIFIERS Arizona Career Ladder Program

ABSTRACT

The general purpose of the Arizona career ladder pilot project is to establish a social intervention program which will result in improvement of the professional development and effectiveness of teachers and enhance student learning. This document is a comprehensive report to the Arizona state legislature on the development and progress to date of the project. Key elements discussed include: (1) historic background of state and national educational reforms; (2) evaluative conceptualization of emerging models and patterns for successful programs; (3) a model component for continued program reform and improvement; (4) principles involving threats to change; (5) research sources and resources; (6) support factors--analysis of research variables, program evaluation and improvement, and the issue of research bias; (7) focus factors--teacher effectiveness, development and leadership, and student achievement; (8) other support factors tied to achievement--social problems, the private sector, and universities. (JD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED302533

EDUCATIONAL CHANGE AND REFORM

RESEARCH & EVALUATION: A Focused Design to Improve Teacher Development and Student Achievement for Enhanced School Effectiveness

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

R D Packard

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Dr. Richard D. Packard, Manager

Dr. Mary I. Dereshiwsky, Statistical Research Specialist

The Arizona Career Ladder Research & Evaluation Project

Center for Excellence in Education - Division of Research Services

Northern Arizona University - Box 5774 - Flagstaff, Arizona - 86011

Phone: (602) 523-5852

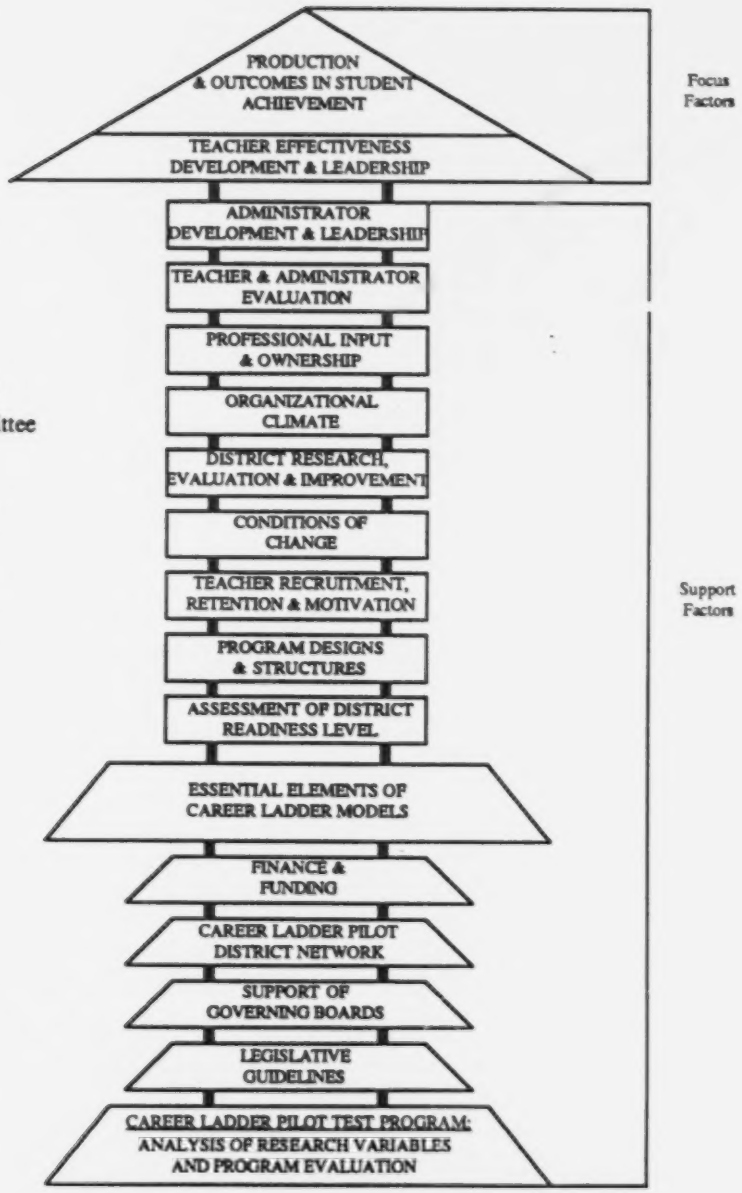
SP030803

BEST COPY AVAILABLE

EDUCATIONAL CHANGE AND REFORM

RESEARCH & EVALUATION: A Focused Design to Improve Teacher Development and Student Achievement for Enhanced School Effectiveness

Document Presented to
the Joint Legislative Committee
on Career Ladders
Arizona State Capitol,
House Wing
November 29, 1988


PRODUCTION & OUTCOMES IN STUDENT ACHIEVEMENT
TEACHER EFFECTIVENESS DEVELOPMENT & LEADERSHIP
Focus Factors
ADMINISTRATOR DEVELOPMENT & LEADERSHIP
TEACHER & ADMINISTRATOR EVALUATION
PROFESSIONAL INPUT & OWNERSHIP
ORGANIZATIONAL CLIMATE
DISTRICT RESEARCH, EVALUATION & IMPROVEMENT
CONDITIONS OF CHANGE
TEACHER RECRUITMENT, RETENTION & MOTIVATION
PROGRAM DESIGNS & STRUCTURES
ASSESSMENT OF DISTRICT READINESS LEVEL
Support Factors
ESSENTIAL ELEMENTS OF CAREER LADDER MODELS
FINANCE & FUNDING
CAREER LADDER PILOT DISTRICT NETWORK
SUPPORT OF GOVERNING BOARDS
LEGISLATIVE GUIDELINES
CAREER LADDER PILOT TEST PROGRAM: ANALYSIS OF RESEARCH VARIABLES AND PROGRAM EVALUATION

A Model of Interrelated Components of Program Support and Focus

Table of Contents

Page

Career Ladder Pilot-Test Program Report - Research and Evaluation 1

Introduction 1

Policy Overview 1

Project Purposes 2

Historic Synopsis of State and National Reform 3

Accomplishments and Directions 3

Summary of Progress in Educational Reform 4

Reasons for Success and Failure in Educational Reform 4

The Lack of Systematic Study and Practical Observations in the Development and Application of Theory 5

Development of Educational Theory 6

Development of Educational Practice 6

Continuing Progress in the Study of Program Development and Effectiveness 6

Evaluative Conceptualization of Emerging Models and Patterns for Success 7

Support and Focus Factors 7

Essential Elements for Success 7

Factors Related to Effective Schools 7

Support and Focus Components of Policy, Organization, People and Concepts 7

Outside Evaluation and Internal Change 7

Mainstreaming Peripheral Support and Focus Elements 7

Evaluation: A Key Model Component for Continued Program Reform and Improvement. 9

Identification of an Evaluative Process 9

Recognition of Natural and Planned Diversity 9

A Recommended Design for Continuing Improvement 10

Principles Involving Threats to Change 11

Isolation, Interrelationships and Integration 11

Balance of Positive and Negative Forces 11

Concepts of Polarization 11

Organizations and Bureaucracies: Policy, Structures and Traditions 12

The Negative Effects of Comparisons 12

The Destructive Nature of Labels 12

The Problem of Equity in Time and Benefit 12

Research Sources and Resources: Evaluation of Program Components and Progress 13

Support Factors. 14

Analysis of Research Variables, Program Evaluation and Improvement 14

The Issue of Research Bias 14

Patterns for Individual District Research (Assessment), Evaluation and Development 14

Legislative Guidelines and Procedures 14

Support of Governing Boards 15

Career ladder Pilot District Network 15

Finance and Funding 15

Rationale for Program Continuation 15

Future Funding of Research, Evaluation and Development 16

Assessment of District Readiness Levels 17

Program Designs and Structures 18

Teacher Recruitment, Retention and Motivation 18

Conditions and Models for Change 19

District Research, Evaluation and Improvement 20

Organizational Climate 20

Professional Input and Ownership 21
Teacher and Administrator Evaluation 22
Teacher Evaluation 22
Administrative Evaluation 23
Administrator Development and Leadership 23
Focus Factors 24
Teacher Effectiveness, Development and Leadership 24
Student Achievement 25
Added Support Factors Tied to Achievement 26
Academic Achievement, Social Problems and the Private Sector 26
Universities and Academic Achievement 26
Conclusion 27
References 28

CAREER LADDER PILOT-TEST PROGRAM REPORT

RESEARCH AND EVALUATION:

A Focused Design to Improve Teacher Development and Student Achievement for Enhanced School Effectiveness

INTRODUCTION

There is no one who disagrees with rewarding teachers based on competency and performance. Therefore, an effective program can be developed which accomplishes this desirable objective.

A primary reason for the lack of measurable progress of educational improvements in the past has been the continued inability of public and private entities to penetrate traditional structures of education. Through its initial legislative leadership, Arizona has paved the way for a major state and national breakthrough in effecting social change and reform.

It is widely acknowledged that education is in need of major change and improvement. However, up until recently, no consistent framework has been devised in order to attain these desirable objectives. This paper presents a design which has been built upon empirical research, in contrast to arriving at evaluative opinions of progress based upon elements of political power and control or the desires of special-interest groups.

Policy Overview

The Arizona State Legislature set the stage for beginning effective reform in education when it passed Senate Bill 1085 in the spring of 1984. At that time, the seventeen districts who applied for program approval were unable to meet specified criteria; therefore, full implementation of the process did not occur until passage of S. B. 1336 during the following spring of 1985. This bill actually launched the conditions for development and possible success by providing a policy and oversight committee (Joint Legislative Committee on Career Ladders - JLCCL), and by establishing an external evaluation for assessment, evaluation and monitoring of program progress and effectiveness.

Of the total pool of applicants, nine (9) districts were initially approved for "Phase I" program implementation in the fall of 1985. Senate Bill 1384, which was passed in the spring of 1986, delineated specific re-application procedures for those districts which had previously been allocated planning funds but which had not yet been approved. This bill also authorized the approval of five (5) new districts, using a "career-development model"; and it revised originally specified deadlines for JLCCL recommendations concerning eventual statewide implementation. As a result of hearings in the fall of 1986, seven (7) of the nine (9) original districts were subsequently reapproved for funding. In addition, three (3) "Phase II" districts

received initial approval to participate in the program. Finally, the first research and evaluation report on the progress and status of the pilot-test districts was presented to the state legislature at this time.

In the summer and fall of 1987, five (5) "Phase III" districts received approval for program implementation. The ten (10) Phase I and II districts were also reapproved by the JLCCL, bringing the total final number of pilot-test districts to fifteen (15). As required by policy, the five (5) Phase III districts were also considered for reapproval at this time. Finally, the second research and evaluation report was submitted and received.

During the spring of 1988, S. B. 1195 extended the career ladder pilot-test project into 1991; established a protectional "immunity" clause for peer evaluators; and allowed for salary reductions under specified conditions. In the fall of 1988, the JLCCL is to consider reapproval of all fifteen (15) districts; receive the present research & evaluation report; and focus on securing further information for making policy decisions and recommendations related to statewide expansion.

Project Purposes

The general purpose of the Arizona career ladder pilot project is to establish a social intervention program which will result in improvement of the professional development and effectiveness of teachers and enhance student learning. In conjunction with various other entities, the objective of the "Arizona Career Ladder Research & Evaluation Project" at the Center for Excellence in Education, Northern Arizona University, is to determine the probability of program success and its likelihood of contribution to positive change and reform in education.

This year's report to the JLCCL will constitute a major change in focus for the Center. More specifically, the presentation will concentrate on making tentative evaluative judgments and recommendations, as opposed to mere factual reporting of the results of data analysis. The research and analysis process is ongoing, with several key objectives of the project at crucial midpoint stages of completion. These include ongoing dissertation assistance to district administrators, teachers and doctoral students; implementation of a number of special studies with themes related to Career Ladders; and making plans for changes and improvements for local developmental needs.

Given the preliminary and evolutionary stages of the foregoing activities, the project findings of the Center should properly be viewed as developmental in nature, rather than conclusive. A continuing concern is the fact that the legislation seems to go beyond limitations of being a career ladder "teacher incentive program" to one of being a "school effectiveness incentive program" involving focus on teacher incentives and improvement, as well as showing accountability for student achievement.

The assumption that teacher-evaluated competency is related to student achievement is in the process of being tested in Arizona. This is in contrast to the research efforts of other reform movements, which have been unable to establish this link between teacher evaluation and performance, and related effects on student achievement.

HISTORICAL SYNOPSIS OF STATE AND NATIONAL REFORM

Accomplishments and Directions

The present career development reform movement in Arizona parallels national and state goals listed by public agencies which have had strong, and sometimes predominant, representation and influence from the private sector. In 1983, The National Commission on Excellence in Education energized national feelings in A Nation At Risk: The Imperative for Educational Reform. This Commission has continued to recommend "career ladder-type concepts" for improvement. However, like so many other commissions in the past, these programs have never been totally realized in the schools. Given the consistently disappointing results of these efforts, the underlying reasons for lack of progress warrant identification and correction.

There have been several state-level education related committees, task forces and commissions which consistently provide excellent recommendations of suggested priorities and areas of focus for the improvement of education. To name a few, the Governor's Committee on Quality Education (1983, November) compiled their consensus document, Education in Arizona: Popular Concerns Unpopular Choices, and the Governor's Task Force on Teacher Education (1984, June) produced Teacher Education in Arizona: Evolution or Revolution. The report by the Commission to Study the Quality of Education in Arizona (1987, July), Commitment to Quality Education: Arizona's Top Priority, contains some very important needs and objectives which are within the legislative intent and goals of the career development project. If these common objectives could be related and integrated there would be some definite headway in actually effecting desired change.

There is some very important work being done by the professional/academic community on the national level as well. In particular, this work has focused on progress related to "effective schools research." Much of the emerging theory has been adopted by several accreditation associations and schools, and there seems to be some promise for positive influence. The likelihood for such positive change to be realized would admittedly be much greater if accreditation agency recommendations possessed the needed "teeth of accountability," as opposed to being relegated to traditional support structures for established bureaucracies.

In looking at the research literature and production of commissions and boards, one would hope to conclude that all of the expenditure of resources in time, effort and money has in fact produced "tangible benefits." While there has been much progress in our knowledge about "how things work," there has not been much actual forward movement in terms of observable results. The following question depicts the ingredient this project (and many others like the Rand Corporation research) is attempting to find: *Does the combination of research and evaluation for decision making (policy research), and legislation based on objective evidence, provide the missing ingredient for lasting change and reform*?

Summary of Progress in Educational Reform. Key considerations in effecting change and reform in education include the following:

1. **National studies continue to provide genuinely disturbing evidence concerning the effectiveness of schools. Not only is there a lack of substantial improvement in educational outcomes; considerable evidence indicates that schools are actually much worse than they were 30 to 40 years ago.**
2. **History clearly indicates that schools will remain virtually unchanged without systematically directed intervention throughout the total related social organization. The primary reasons why reform movements in the past have left schools basically unchanged are becoming evident. The basic question is, "Can society recognize the reasons for failure and build on a pattern for success?"**
3. **Significant expenditure in human and financial resources over the past several decades has resulted in little or no corresponding benefit in associated educational improvements.**
4. **Some may consider the desired level of educational change and reform to be beyond the present resources and capabilities of the system. However, maintenance of the status quo effectively amounts to repeating the cycle of failed attempts of the past 80 years. This would essentially waste human and financial resources that are presently within the capability of the system. Furthermore, if properly directed, many processes and procedures can be changed regardless of the limits of available resources.**
5. **Throughout national and international history there have been many social "breakthroughs." In order to attain a critically needed level of excellence, the time has come for such a breakthrough in educational reform.**
6. **Arizona has made substantial progress in identifying causal factors in two critical areas:**
   a) **social change in educational structures and bureaucracies; and**
   b) **the conditions within which teachers and students are required to work and learn.**

Reasons for Success and Failure in Educational Reform

There are several reasons why Arizona may be in the forefront in effecting educational change and reform. One major factor is that the State Legislature has seen fit to pilot-test, study and effect change and improvement over a period of years, rather than imposing ill-conceived edicts from powerful interest groups

and government bureaucracies in a way which is obviously causing the downfall of other state programs. Some other important differences in the Arizona program, as opposed to others are as follows:

1. There is a philosophical base and focus on both the development and improvement of teacher performance, and "requiring" accountability to be shown through student achievement. Other reform movements have consistently failed to make this crucial connection. The assumption continuing to be perpetrated is, "If teachers improve based on rationally devised evaluation criteria (and sometimes invalid observation procedures), then students must learn better." No longer should educators be encouraged to continue this "less - than - professional" tradition. Teacher responsibility and accountability for learning should be, and can be, reliably measured, evaluated, recognized and accomplished.
2. Rewards for professional development, competency and performance are based on a continuum of observed hierarchical levels, and evaluated using increasingly reliable and valid processes and procedures. Other state programs are using merit systems which have been tested and consistently shown to be unsuccessful in the past. These other programs have not required incentive revisions of the traditional salary schedule. In addition, they pay teachers based on a stipend, bonus or "lump-sum" increment above the regular salary schedule (based on general categories from "excellent" to "satisfactory"), rather than requiring a more sophisticated system of discrimination based on levels of competence and performance. By doing this, they avoided the controversial and difficult issue of recognizing that, like their students, teachers do, in fact, differ in experience and capabilities.
3. Input and professional ownership of teachers is an important goal being stressed by Arizona legislators and policy makers. Unlike their counterparts in the medical-profession model, classroom teachers have traditionally found themselves at the bottom of the decision-making process, while at the same time being held accountable for the direct care and learning of their student clientele. Other states have continued to see the teacher as someone who carries out the directions of their superiors with little or no input.
4. Outside research and evaluation has been built into the pilot-test. The continued inability of researchers (society) to penetrate traditional structures and bureaucracies has contributed to the lack of progress of educational improvements and reforms in the past.

The Lack of Systematic Study and Practical Observations in the Development and Application of Theory

Theory is one of the basic aims of scientific research. It is most useful and practical when systematic and valid procedures are used to get at reality, or in other words, the truth. Education essentially

has lacked the conditions for improvement through objective research. Change has come about mainly as a result of political and governmental pressures far removed from the realities of the classroom setting.

Development of Educational Theory. Educational theory is often based on rationale devised by specific interest groups or on intuitive levels of thinking by "experts," rather than on scientific research. Much of the time, educational researchers have had to develop theory about the way things work in surroundings which are radically different from the actual teaching & learning environment. In this case, study of the career ladder pilot-test program has mandated that schools undergo extensive internal research, evaluation and monitoring by an outside Center for Excellence in Education, which was created by important reform legislation in the State.

Development of Educational Practice. Lack of extensive practical and applied research, evaluation and development have been major reasons for the sparcity of progress in change efforts. These factors also explain why professional-education schools and colleges have not kept pace with the expanded academic community in terms of research sophistication. As an even more extreme example, there is a considerable lack of practical knowledge as to the key elements of successful education of pre-service teachers for today's school environment. This, in turn, has hindered the development of valid teacher education programs. Knowledge which is being accumulated through career ladder research could have the potential and positive implications for future development of professors in the field of education. Assurance that education professors have an in-depth understanding of the schools' environmental conditions would be an encouraging force for aspiring professional practitioners.

In the "medical model," professional practitioners are developed for the purpose of caring for their patients' health. Education schools probably need to train practitioners who have more realistic, helpful and directed skills and who are better able to understand their instructional requirements and responsibilities for student learning. Policy makers may want to review the research resulting from the career ladder project and its implications for improvement in information and skills being taught to aspiring teachers.

CONTINUING PROGRESS IN THE STUDY OF PROGRAM DEVELOPMENT AND EFFECTIVENESS

The research and evaluation project has resulted in emerging models for change. Study and observations over an extended period of time have resulted in an ever-expanding accumulation of recognized interrelationships important to achieving the desired goals of improvement in teacher development and student learning. From the time the research identified "essential elements" involved with failure or success of reform movements in the past, there have been many additions and adjustments. As the study continues, there will be an even greater expansion of related areas which are equally critical to change and improvement in educational systems.

Evaluative Conceptualization of Emerging Models and Patterns for Success

The most recent "Model of Interrelated Components of Program Support and Focus," is shown on the following page; an earlier version can be found on the page following the document cover. These components can be discussed and analyzed in several different ways.

Support and Focus Factors. To date, the project has identified sixteen "support factors" which are important relative to program success. The "focus factors" relate to the major program goals of developing teacher effectiveness and improving student achievement.

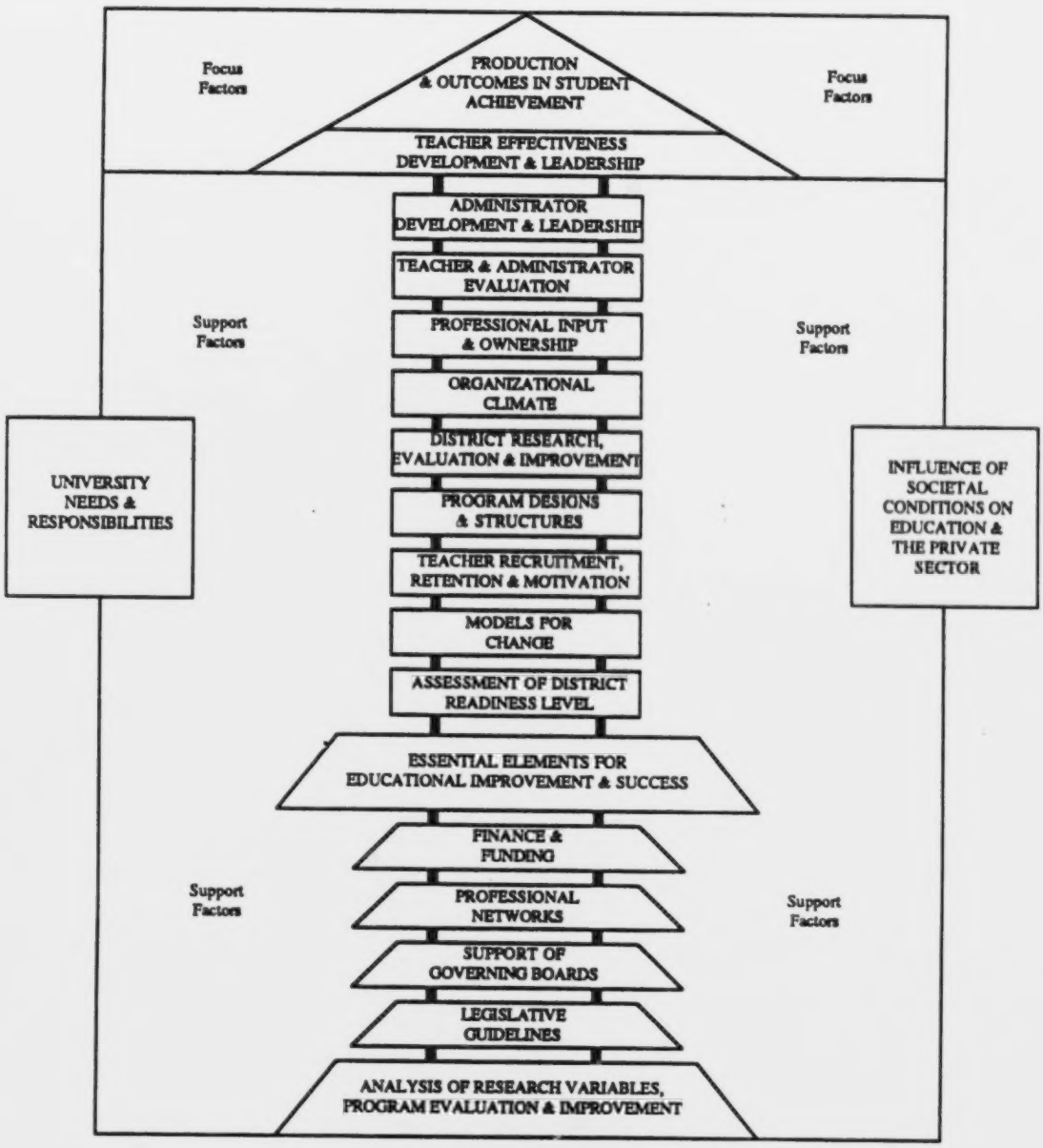
Essential Elements for Success. An initial review of past reform movements resulted in identification of the elements of the model found to be essential for educational improvement and success. These had to do with research and evaluation, ability to change, sufficient funding, healthy working environment, professional input and ownership, fair and objective evaluation system, astute administrative leaders and professional teachers. Every single one of these elements needed to be operating in a positive way in order to insure program success. That is, if even one of the foregoing elements was negative, the chances for success were virtually nil. The failure of so many past programs can, in fact, be attributed to one or more dysfunctional elements in the model.

Factors Related to Effective Schools. The United States Department of Education's, What Works: Research About Teaching and Learning (1986), identified the factors which are crucial to effective schools. Most of the key elements found to be most influential are closely related to the essential support factors which emerged in the Arizona project. The most important characteristics of effective schools include: (1) "strong instructional leadership"; (2) "positive organizational climate"; (3) "high teacher expectations for student achievement"; and (4) "continuous assessment of pupil progress."

Support and Focus Components of Policy, Organizations, People and Concepts. To serve specific research questions or purposes, different combinations of interrelated components may be studied together or in isolation. Each of these categories may be evaluated in terms of its role in relation to program goals.

Outside Evaluation and Internal Change. One can look at the model from outside evaluation through internal change & development. "It is important to evaluate this model in terms of its twofold-purpose. For one thing, it identifies specific areas which are in need of change. Secondly, it establishes a framework, or an ongoing process, by which change can be operationalized and periodically monitored."

Mainstreaming Peripheral Support and Focus Elements. There are related areas which need to be considered for greater integration into support of teacher and student development. The private sector has more integrative support potential than is being brought to bear. That is, collaborative programs of interest with business and corporations should be integrated into the total system, and their input needs to be more systematic.


Focus Factors
PRODUCTION & OUTCOMES IN STUDENT ACHIEVEMENT
Focus Factors
TEACHER EFFECTIVENESS DEVELOPMENT & LEADERSHIP
ADMINISTRATOR DEVELOPMENT & LEADERSHIP
TEACHER & ADMINISTRATOR EVALUATION
Support Factors
PROFESSIONAL INPUT & OWNERSHIP
Support Factors
ORGANIZATIONAL CLIMATE
UNIVERSITY NEEDS & RESPONSIBILITIES
DISTRICT RESEARCH, EVALUATION & IMPROVEMENT
INFLUENCE OF SOCIETAL CONDITIONS ON EDUCATION & THE PRIVATE SECTOR
PROGRAM DESIGNS & STRUCTURES
TEACHER RECRUITMENT, RETENTION & MOTIVATION
MODELS FOR CHANGE
ASSESSMENT OF DISTRICT READINESS LEVEL
ESSENTIAL ELEMENTS FOR EDUCATIONAL IMPROVEMENT & SUCCESS
FINANCE & FUNDING
Support Factors
PROFESSIONAL NETWORKS
Support Factors
SUPPORT OF GOVERNING BOARDS
LEGISLATIVE GUIDELINES
ANALYSIS OF RESEARCH VARIABLES, PROGRAM EVALUATION & IMPROVEMENT

A Model of Interrelated Components of Program Support and Focus for Effecting Change and Reform in Education

In addition, universities should be integrated into the model in a more direct way, because they have major responsibilities in: (1) research & evaluation; (2) pre-service and inservice education of teachers and administrators; and (3) public service support to help schools develop program components which have been found through assessment to need positive change.

A component not depicted in the model relates to "special professionals." This category includes personnel such as counselors, librarians and school psychologists. Since student achievement depends on healthy minds and bodies, these special instructional leaders need to be appropriately considered for incentives and specific development.

EVALUATION: A KEY MODEL COMPONENT FOR CONTINUED PROGRAM REFORM AND IMPROVEMENT

In 1985, the Legislature mandated and external evaluation of the career ladder project. During this period of time, the JLCCL accepted the "evaluation model" which was proposed by the Center's research project. This "improvement model" was presented in an orientation meeting held at Grand Canyon College (1986, January 8), and may be considered the early beginnings of the "Network." Of all of the developmental activities which took place at this time, one issue is especially noteworthy, due to the lively discussion which it engendered: namely, the idea of linking teacher performance to student achievement.

Identification of an Evaluative Process

After the project determined that districts needed to show improvement in their plans during a period of five years, the following question was immediately posed: "How can the project evaluate improvement, when there was no comparative evidence which reliably measured and evaluated it?" Research instrumentation and procedures were, therefore, devised and applied, which provided information for project and district use in identifying areas for improvement.

Recognition of Natural and Planned Diversity

For the career ladder experiment to have lasting effects, an overriding concept which must be recognized and understood is "*diversity*." One of the strengths of the legislation has been to set general guidelines which focus on goals of change and improvement. Concomitantly, policy allows each district to develop specifics of the program to mesh with individual uniquenesses. This is one example of planned diversity.

Natural diversity happens due to several environmental and experiential factors. These conditions effectively establish the "readiness levels" of districts in development and implementation of programs such as career ladders. Each district is at a different developmental level in each of the essential factors related to program success. Readiness levels are determined by a combination of variables including: (1) district

maturity, motivation and past experiences in developmental areas needing change and improvement; (2) environmental location; (3) cultural diversity; (4) people and financial resources; and (5) whether the district is currently in Phase I, II, or III.

Diversity is a recognized fact: "There is no way to recover from being different." It is necessary to assess these differences in order for each district to develop and improve, given their present circumstances in areas important to reform.

A Recommended Design for Continuing Improvement

Structures and designs will solidify and eventually become obsolete if there is no "continuing" requirement to change and improve. This process for change needs to be built into any future attempts at reforms such as career ladder programs.

The recommended pattern includes the following steps:

1. Assessment of district readiness levels from an outside source
   a) Some districts will be ready to plan and implement a career ladder program.
   b) Some districts will need developmental time for certain assessed areas before implementation.
   c) Some districts may not be ready, but they may be motivated (or willing) to make adjustments for future applications.
2. Implementation of improvement models
   a) Districts which are ready will need to implement "evaluation models" which guide continuing development and improvement on a yearly cyclical basis.
   b) Districts which needed development of some important internal components, must apply change and evaluation models for improvement and development.
   c) Districts judged as not yet ready will require planning for restructuring and change to meet career ladder criteria for acceptance.
3. Accountability for improvement of developing or implemented programs
   a) Districts should be held accountable for outside assessment, application of evaluation improvement or change models and reporting improvement to the policy approval board.
   b) Where change is needed, districts should use internal or external resources ("expertise") for assistance.
4. The process of evaluation and recycling for reapproval
   a) In the early stages of development of the career ladder program, improvement should be reported each year.
   b) Programs which are assessed to be in advanced phases of development may legitimately be granted a longer period for reapproval.

All district teachers and students need to be placed at an initial baseline level, and subsequently developed from that point, in order to strengthen and document the total program and system progress. In this way, improvement or achievement would have the greatest potential for success.

PRINCIPLES INVOLVING THREATS TO CHANGE

Outside intervention is required for change and improvement, because there are natural counter-change forces involved. The career ladder project research and evaluation has identified some of those factors which have blocked change and reform in education.

Isolation, Interrelationships and Integration

"Tinkering" with important program components in isolation is essentially a futile effort. For instance, attempts to change the element of development and improvement of teachers in isolation, without consideration of other interrelated components, has been a major reason for program failures in other states. As an example, focusing on teacher development in isolation, without attempting to link it to student achievement, or stress and morale in the working environment, is a mistake. Recognition of such interrelated components is necessary, but not sufficient, for success. They must be explicitly integrated into long-term change strategies.

Recommendation: "*Integration of support and focus factors must be accomplished through defining the role of each element and restructuring it to carry out responsibilities for having the greatest positive effect on teacher development and student achievement.*"

Balance of Positive and Negative Forces

Evaluation concepts, program designs, and change models typically operate in various stages of "balance." If they happen to be "out-of-balance" in a negative and/or polarized direction at a given point in time, the probability for positive change without directed intervention strategies is greatly reduced.

Recommendation: Each component of the model related to support or focus within a district's program needs to be assessed and changed if it is out-of-balance in a negative direction.

Concepts of Polarization

Polarization is almost inevitable in any human or interpersonal endeavor. For example, if the administration of a district is seen as being very arbitrary and capricious in communication and decision-making processes, teachers have a tendency to organize and react to counter disagreeable conditions.

Recommendation: Before districts are approved for implementation of a career ladder program, the level of polarization should be assessed. Districts that are found to have an established tradition and structure of polarization should only be approved if they are willing to submit to systematic evaluation, change and improvement models.

Organizations and Bureaucracies: Policy, Structures and Traditions

Organizations typically operate under conditions of "tradition" and varying levels of solidification of "structures," with their main objective being survival at all cost, thereby strengthening their established direction and control. This condition severely restricts any probability of dynamic or creative development.

Recommendation: Planned restructuring should be a condition for program approval, especially in the case of extremely solidified organizational bureaucratic structures and traditions.

The Negative Effects of Comparisons

The tendency to compare one teacher to another, while perhaps inevitable, is often based upon erroneous assumptions and can have a destructive effect on efforts to improve conditions. The same negative effects happen when districts are compared to others or when students are compared to peers rather than to their own improvements.

Recommendation: Each teacher, as well as each district, should ideally be perceived as a "case study." The actual performance of each teacher should be compared to program criteria. Each district should be evaluated relative to policy guidelines and according to the amount of improvement shown, if any, from originally assessed or "baseline" levels.

The Destructive Nature of Labels

Those individuals who have had to cope with recent political battles understand only too well the negative repercussions of "labeling." The associated distortions and inaccuracies have constituted a strong counter-force to lasting reforms in education. Unfortunately, the career ladders program has not escaped these negative consequences of "labeling." In particular, the "career ladders" label has often been misleadingly attached to several otherwise failing programs and conditions in other states.

Recommendation: It is recommended that the JLCCL review the issue of the potential negative connotation which the "career ladders" label is causing, and determine if a title like "Effective Schools Incentive Program" would be more descriptive of actual project influence. Effects of the project not only impact teacher performance, but the total educational system, culminating in improved student learning.

The Problem of Equity in Time and Benefit

One of the greatest detriments to expanded support of educational systems and the profession of teaching is the wide discrepancy in the amount of time which a teacher is obligated to his/her employers, as compared to other professionals. This inequity has been one of the major public arguments against increasing benefits and monetary rewards for teachers. In many instances, inequality of time on task has been the "final blow factor" to educational reform. This issue has been an embarrassment to some teachers

who continue to self-improve over the summer months, but without formal recognition or a job assignment. Furthermore, districts need the expertise of teacher leaders over the total year period.

Recommendation: Along with revised salary schedules, career ladder professionals should be considered for a 12-month contractual obligation with equitable vacation periods. A primary advantage of this proposed arrangement would be its provision for districts and their teachers to work on assignments which would develop their skills and knowledge in areas of assessed needs. More advanced teachers could expand their expertise in instructional-specialist areas, such as computers, media, evaluation, motivation & retention, and curriculum development. Others could prepare for mentoring, coaching or clinical supervision to support beginning and developing teachers. The way in which this adds to "empowerment" of teachers and development of teacher leaders is discussed in a following section.

RESEARCH SOURCES AND RESOURCES: EVALUATION OF PROGRAM COMPONENTS AND PROGRESS

The research and evaluation activities of the Center have expanded at a rapidly increasing rate. Many resources have contributed to these efforts, providing a depth and breadth of information about the factors which relate to career ladder developments. These sources include the following: (1) local, state and national literature in the field continues to be reviewed; (2) responses to the yearly dissemination of the "Perception Assessment Scale" survey have been converted into a computerized data base. These files have been processed using a data-definitions master program which completely defines each variable as to its location, format and meaning. Because of its prior definition and storage in compressed format, this data base can be retrieved and analyzed with shorter quantitative programs very rapidly. These quantitative analyses have ranged from simple descriptive statistics to complex multivariate techniques such as maximum-likelihood factor analysis. Although data files are currently maintained on a yearly basis, the storage formats have been kept parallel, which will enable the researchers to merge files and execute time-series analysis in the future; (3) a number of doctoral dissertations on the subject have been completed, and many more are in the planning and completion stages; (4) the JLCCL & its research analysts are developing and coordinating extensive information, data and more formalized reports; (5) the "Network" and "Task Forces" are identifying and fulfilling dissemination needs; and (6) district internal evaluation & development plans are in preliminary stages of detailed development.

Each of the sixteen support factors and two focus factors related to career ladder program development will be briefly discussed in terms of present findings and possibilities for future direction. The reference section of this document contains a partial listing of completed and forthcoming publications related to ongoing research and evaluation of various program components.

SUPPORT FACTORS

Analysis of Research Variables, Program Evaluation and Improvement

The various data collection and analysis procedures discussed earlier will continue to be implemented through the 1989 reporting period. In the interest of improvement of research and evaluation procedures, some refinement in specific data collection operations is in order.

Special focus will continue to be given to the effects of certain demographic variables, such as career ladder participation and position in district, and the way in which they result in differential patterns of responses to the attitudinal survey. Several documents of this type pertaining to the latest cycle of operations are being made available for your review and are listed in the reference section of this document.

The Issue of Research Bias. One particularly troublesome concern which has repeatedly been voiced by both participants and professional organizations is the issue of confidentiality with respect to data-collection procedures. In their zeal to help insure maximal response rates, some districts may have inadvertently used procedures which compromise the confidentiality of their respondents. This, in turn, can severely bias the analysis and conclusions upon which these responses are based. As a result the information-gathering procedure will be reevaluated and revamped as necessary for future implementation, in order to improve both actual and perceived confidentiality.

Patterns for Individual District Research (Assessment), Evaluation and Development. A second prominent feature of responses to date has been the tremendous diversity evident across participating districts. This finding implies that such specific needs should be identified, assessed and individually targeted for feedback and development of district plans in the future.

One possible solution is for the JLCCL to encourage districts to follow a recommended plan of guided improvement. The project has begun analyzing qualitative data, which provides specific information on each essential component of the model. Information can be made available on both a district and school level. It is recommended that each career ladder district review this information, target an area for change and begin the development and evaluation process for improvement. By 1989, this would give us specific information about the potential for successes through directed planning and evaluation.

Legislative Guidelines and Procedures

The wide-ranging support provided by legislative sources to date has approached an enviable status on the part of professionals, school executives in other states, and national public policy researchers. These legislative efforts have included guidelines, visitations, monitoring, assessment policy, and development of "Task Force" plans and procedures.

In the immediate future, particular attention needs to be given to the following areas: (1) equity in funding based on levels of program development and proportion of teachers on the ladder; (2) consideration of possible restructuring of available state funds already appropriated; (3) review of the issues related to state

and national imposition of standardized testing procedures; (4) "mainstreaming" the university system as an important support and change factor; and (5) continuation of a research, evaluation and development component for reform, including program assessment.

Support of Governing Boards

District and state governing boards are crucial to successful reform. Continuation of procedures to bring them into the mainstream of input and development is of utmost importance. Local boards should be encouraged to review the Center's evaluation feedback to the districts, work with their administration and outside resources to effect needed changes, and become aware of support and focus factors which result in optimally effective schools.

Because of their critical importance to the ongoing development of career ladder programs, the commitment of school board members needs to be carefully encouraged. For one thing, they should be kept apprised of the latest developments, changes and concerns. In addition, their involvement and feedback should be explicitly incorporated into the reapproval process.

Career Ladder Pilot District Network

The JLCCL and other policy bodies should encourage the participation and membership of all CL districts in the "Network." This type of committee could be very valuable in implementing the specifics of program reform and improvement. It serves as a professional liaison between school practices and policy-making bodies and has been an obvious asset in helping with revisions and support of JLCCL guidelines. The Network and its committees have been a significant and positive force in assisting with program research and evaluation, public information, recommendations for legislation and assisting districts.

Finance and Funding

The issue of finance and funding has played a pivotal role in the success or failure of past reform movements. It, therefore, warrants special consideration as part of any proposed plan for state expansion of the career development concept. Regardless of the amount of funding or expansion from the state, districts should be encouraged to attempt at least a preliminary plan of rewarding teachers based on levels of competency and performance.

Rationale for Program Continuation. Those pilot programs which are currently underway deserve continued development, irrespective of the ultimate status of planned statewide expansion. There are two major reasons for this recommendation: (1) districts and teachers have planned, and are implementing, major positive changes which are developing teachers and are on the verge of showing measurable accountability for student learning; and (2) the reform movement process itself needs testing to determine if a breakthrough in social research and reform can be effected.

Improvement and change efforts need to continue being implemented, regardless of the level of funding expected in the future. Many of the programs being funded in "isolation" could be integrated to focus on the goals of all. Funds which are presently available may be able to be restructured to focus on change toward program needs. With appropriate leadership and direction, schools will continue to adjust and change in the direction desired by the public.

As with any scarce resource, government funds for programs such as Career Ladders should ideally be allocated according to principles of cost-benefit analysis. That is, these dollars should be targeted to those districts which have the greatest potential for successful implementation of the program.

Certain of the participating districts admittedly have not had various support factors in place. Given their inability to, in effect, demonstrate an acceptable level of "return on investment" at this time, their future share of career ladder funding support may need to be correspondingly reduced or even eliminated. However, developmental funds may be provided to those problem districts which show a motivation and willingness to improve.

In general, the limited dollars should be allocated to those districts which have clear track records of producing tangible benefits with their shares of career ladder funds. Doing so would allow for successful continuation of the program where maximal benefits are most likely to continue being realized in the long run.

One final point needs to be noted: research has not conclusively established that level of funding is the most crucial element for program success. It is entirely possible that other factors play a more major role; for example, such aspects of programs as teacher input into the decision-making process, organizational climate, incentive plans, and other internal political and governance factors. Certainly the impact of total available funds should not be discounted or minimized. However, given the foregoing discussion of optimally allocating scarce resources, it may be possible to restructure and redirect available funds in order to obtain significant effects and needed improvements.

Future Funding of Research, Evaluation and Development. As outlined above, it is important to continue funding of outside research and evaluation activities, as well as to require districts to determine areas of weakness and apply corrective or improvement procedures. To date, this issue has been solved through funding by the Center for Excellence in Education budget and intergovernmental agreements with the pilot districts. The following are some possible options which may be considered in supporting R & D efforts in the future:

1. As is the case now, pilot districts (or the "Network") could fund R & D out of legislated program funds through intergovernmental agreements;
2. The Board of Regents could develop or restructure programs to fund R & D for program research, evaluation and improvement;

3. Law makers could establish a research center with the responsibility of assessment, evaluation, development and reporting of district progress and accountability; or
4. A combination of the first three recommendations may be warranted.

Assessment of District Readiness Levels

Assessment of all interrelated components which are essential to program improvement and success is the first step required for the realization of desired goals. Before a district can account for improvement, supportive evidence must be made available from the planning and implementation stages ("formative evaluation"), all the way through to "summative evaluation." The "evaluation model" agreed to from the beginning is one which assessed improvement on a cyclical basis. This model was researched and tested in practical situations prior to the time it was presented to the JLCCL in 1985.

There has been an annual analysis of data collected by the project, which is then returned to each district for its use in internal evaluation and improvement. During this year's cycle, districts and the "research center" needs to improve its communication methods, in order that each district may best analyze its own particular results and determine targeted priority areas.

Research and assessment of participating districts to date has determined that there is a diversity of readiness in each of the essential elements for success. This process needs to continue, along with monitoring, feedback and corrective revision of plans, in order for individual districts to realize maximal improvements in key interrelated components. Otherwise, some districts will be frustrated in their efforts to improve and will essentially remain unchanged.

Examples of difficulties being faced by some districts include the following:

1. A district may require teachers to change and develop with only *de facto* representation or input, while the leadership and structure is not required to adjust to advanced ways of improving production.
2. Serious efforts to develop objective and open internal research and evaluation plans in cooperation with governing boards are often lacking.
3. Some administrators continue to see their role as being primarily authoritative or dictatorial, which in turn entitles them to have orders carried out without question. Along with this expected blind loyalty, workers are expected to "do their jobs" without the opportunity to participate in organizational goals or decisions.
4. Some teachers are under-educated as instructional specialists and lack knowledge about important professional tasks; i.e., constructing instructional objectives or being able to show accountability for student learning precisely.
5. Teachers lack the time to be effective instructional leaders, given the usual nine months of school-related work.

6. Administrative evaluation systems in several districts are too underdeveloped to support career ladder programs.
7. Morale is extremely low in some districts. As a result, they are losing high-quality teachers within short periods of time. This also results in a depreciation in cost effectiveness.

Program Designs and Structures

Participating districts have followed and developed designs & structures based on the guidelines of the JLCCL. All of these designs include: number of career levels, evaluation criteria and structure for accountability for student achievement. There should be, and is, a diversity in the specific ways in which districts have developed internal evaluation criteria, processes and procedures for career ladder placement based on local uniquenesses.

It is important to keep in mind that there is no such thing as the "ultimate" program design or structure. Good long-term program planning is very much an evolutionary process. As with other components of the model, each segment of the design needs continual evaluation and change.

A number of Phase III districts are attempting to implement the "matrix model" as the major component of their respective program designs. Despite their prevalence and popularity, there is actually little evidence that these models have been adequately tested prior to district implementation. The advantages and disadvantages of this model need to be evaluated carefully by each district prior to its adoption. This preliminary evaluation should also include awareness of, and remedial measures for, initially unanticipated negative side effects.

Teacher Recruitment, Retention and Motivation

Two particular aspects of the program have consistently been appreciated by career ladder teachers. These are the teacher incentive and development concept, and the potential for "teacher empowerment" through direct involvement, input and ongoing participation. Recruitment, retention and motivation are being rigorously studied through multiple channels. Several districts are collecting data on these issues locally; this information is being analyzed and coordinated by the Center. A doctoral candidate at NAU is currently studying the factors which motivate teachers to perform at a high level. Finally, ongoing presentations and seminars in college classes have resulted in a high level of interest and feedback on personal experiences with the career ladders program. Such interaction often raises new questions and research issues to pursue. These activities have the potential of resulting in an extensive research base in the near future. Findings and research observations to date clearly indicate that the career ladder reform movement, at least in this state, is a very desirable one for aspiring teachers.

Conditions and Models for Change

Several key issues have merged repeatedly from current research; they will be briefly summarized at this point.

As previously indicated, individual districts are at different levels of progress with respect to the interrelated components of the model. More specifically, there is a diversity of development within each support and focus factor, as well as in conditions for change.

The impact of negative factors, as well as the presence of non-supportive factors, in hindering change efforts was previously discussed. Under these conditions, outside intervention and assistance is necessary. It would , therefore, be advisable for schools to identify and prioritize those specific components needing change, and to initiate systematic plans for improving those areas.

Socioeconomic conditions can be either supportive of, or detrimental to, the development, implementation and improvement of career ladder concepts. Each district has experienced these effects at varying levels of severity and throughout the distinct components of the general model.

Career ladder research substantiates current change theory. Tested theory has established the fact that there are several phases of development when individual or program change is implemented. There are approximately eight distinct stages which have been identified. The full impact of change (if it is realized at all) may take eight years to accomplish, with the most difficult phase being the third step. In the first couple of hurdles, it is relatively easy to plan and implement a new or revised program. However, when it is found that established structure and tradition are being upset, and there appears to be no "great improvement," it is difficult to complete that third developmental stage. Once a program implementation can get past this phase, the probability for success is considerably increased.

The research project is experiencing the validation of these change theories in a very practical way. For instance, at the inception of the project it soon became evident that several of the Phase I districts were unable to progress beyond these initial developmental stages. This is because they were plagued by certain of these "negative forces" which were destructive to successful continuation.

Examples of such negative forces include:

1. using procedures of "top-down management;" that is, the strict imposition of programs without open input from teachers;
2. applying their own interpretation of JLCCL guidelines, rather than cooperating or coordinating;
3. resisting outside intervention of evaluation, which could upset the traditional structure and control due to their own insecurities; and
4. exhibiting extreme "frustration" and "emotional stress" at all levels of district organizations.

At this time, some Phase III districts are experiencing a phenomenon common to change. Paradoxically, the change process sometimes triggers a regression, or reversal. When the forces of "tradition and structure" are initially disturbed, the resultant disequilibrium may come as too much of a shock to those

who are accustomed to the security of familiar ways of doing things. Without a support structure in place to ease the transition, the resistance which change engenders could actually result in a step backward from original conditions.

As previously indicated, districts are at different levels in each of the interrelated components of the model. For each district, research shows a diversity of development within every essential support and focus factor of the model and in conditions for change. When the ability to change is limited because of negative or non-supportive factors, outside intervention and assistance is necessary. In collaboration with the Center's research, it would be advisable for schools to prioritize components needing change and systematically initiate plans for improving those areas.

During the most recent JLCCL meetings, two career ladder teachers expressed the belief that "the career ladder concept, such as rewarding teachers based on performance, is the best thing that has happened to education." At the same time, they (and others) are indicating an increased frustration over the lack of systematic observable change. The inescapable fact remains that structure and tradition simply do not allow for change without appropriately planned intervention. There are certain district-specific factors which can spell doom for the most well-intentioned change and reform efforts, unless needs are appropriately assessed prior to application of change strategies. These will be discussed in greater detail in the following section.

District Research, Evaluation and Improvement

One of the original "essential elements of career ladder models" relates to the area of documentation of change and improvement from the beginning to the end of a program reform cycle. There has been no shortage of superlative comments made about the "great advantages" and "wonderful effects" of such aspects of the program as the idea of merit pay, especially at its inception. However, this initial euphoria often turned to disillusionment, especially at the lack of tangible gains or improvement despite considerable expenditure of efforts and funds.

This particular area is not being studied systematically by the Center's research and evaluation project at the present time. However, two districts located in the Tucson area currently have locally developed internal evaluation programs. The results of one of these studies were accepted and presented at a national conference related to evaluation of exemplary teacher development programs.

Districts need to continue to focus on this important component in cooperation with the outside assessment and evaluation project. Throughout this procedure, they would be assisted in validation of evaluation techniques and receive advice on the status of their individual district in relation to other essential elements of success.

Organizational Climate

The main area of focus for "effective schools" relates to conditions of organizational climate. Career ladder research substantiates effective school research as being a key area for success and one which,

therefore, warrants concerted attention in career ladder districts. Systematic study and change is necessary to develop the type of communications and interpersonal relationships which are necessary within an organization in order to maximize progress in the focus areas. The Center's research has substantiated the high relationship between perceptions of program progress and environmental conditions of each system.

Those districts which are doing well should be carefully studied, in order to develop and successfully apply improvement models from their particular experiences. On the other hand, intervention models are warranted for those districts which are experiencing problems with interpersonal communications, relationships and morale within the workplace.

Professional Input and Ownership

A primary objective of outside evaluation, as mandated by legislative guidelines, is to obtain assurances of teacher input into development and improvement of the career ladder model. Data bases developed from responses to the Perception Assessment Scale survey are so comprehensive and rich in detail that they readily lend themselves to a wide range of quantitative and qualitative analyses, all of which will take years to complete. The Center's data analysis efforts will focus on only a small sampling of these areas of interest, due to the constraints of reporting deadlines.

There is one effect of research efforts which warrants special mention, due to the fact that it is often unanticipated or overlooked. Research results and feedback to district have been a surprisingly potent catalyst for administrative and board-member improvement in policy and management behaviors. For example, superintendents and principals in some districts are conducting formal and informal development plans for the improvement of their effectiveness with various elements essential to progress.

As an example, in one case a principal was required to produce a "self-development" plan, to be evaluated on a cyclical basis. The main objective of this plan, which was formulated as a direct result of the project's feedback of evaluation information to individual districts, was to improve effectiveness of the various elements essential to progress. In another instance, one superintendent has adjusted administrative procedures to improve the quality of communications with the school board and teachers. Finally, several top school officials have left their positions, due in part to their inability to change their organizational structures rapidly enough to implement their respective career ladder programs.

On the negative side, some persistent accusations of "research bias" have been leveled in the areas of teacher input. This has been especially prevalent in districts which suffer from extremes of political polarization or "extra-zealous" administrators attempting to achieve high percentages of response return at all costs. The Center's research procedures will be carefully reviewing this situation in order to answer two basic questions: (1) Has a lack of confidentiality in fact biased past returns? and (2) Is political polarization so structured and traditionalized in some districts as to warrant recommendations for the withdrawal of career ladder funding?

An interesting anomaly has been observed in districts with extreme political polarization: teachers can be very happy with the established tradition and at the same time opposed to the career ladder reform movement. In general, there is a positive relationship between perceptions of one's working environment ("organizational climate") and appreciation of career ladder concepts. However, in one district the opposite effect has been observed: that is, a "high" appreciation of current working conditions along with a "low" appreciation of the characteristics of career ladders. One possible explanation for this result has to do with the influence of long-term, traditionally strong teacher union district structures. In such settings, there tends to be a satisfaction with both established "counter-force" power and the status quo generally, as well as with their influence on administrators.

A dissertation study is in process of answering questions about the type and level of involvement and leadership of "organized professionals" (including AEA & AFT) in the development of the career ladder concept. Bennett, past U.S. Secretary of Education, as well as many others, blames teachers' unions for the destruction of reform movements. However, this generalization may be much too extreme. Several leaders in the career ladder reform movement in Arizona are also leaders in their respective professional organizations.

Polarization is admittedly a detriment to reform; however, it can be overcome through a systematic application of change models. First of all, there must be an initial assessment in order to determine the current level of teacher appreciation for the reform program. Secondly, the propensity of willingness or motivation to change needs to be established. If there is a strong satisfaction with the status quo and a concurrent unwillingness to change, the level of career ladder funding should be reassessed, perhaps limiting it to those teachers who desire the individualized development plan. Legislative and political leaders will receive greater support if they allow "status quo" teachers to continue with their desired and negotiated reward system. In that way, it can be a "win-win" situation. Of course, a "mixed district" should be considered for funding based on proportions of teachers needing an incentive program in order to stay in the profession.

Teacher and Administrator Evaluation

Legislative guidelines are very specific in this area of concern. One of the most positive advances made in school districts relates to changes and reform in evaluation instrumentation an procedures. Most career ladder districts have developed fair and objective plans with input from teaching personnel. Among other processes related to teacher and administrative evaluation systems, two dissertation studies which assess administrative perceptions of career ladder programs and program designs and structures have been completed. Two additional studies are in progress which assess improvements in administrative evaluation systems and relationships among different types of teacher evaluation criteria and processes.

Teacher Evaluation. Most career ladder districts have made tangible progress in the area of the development of evaluation systems; these include a variety of types of input for level analysis and

placement on the ladder. Portfolios, classroom observations, individual improvement plans and plans for accounting for student achievement are a few of the common and comprehensive ingredients for evaluation. Some districts have advanced to the point of being ready to test other evaluative theory, which in turn will undoubtedly improve this important component.

One noteworthy example is the idea of development of different evaluation criteria and procedures for teachers who are in different phases of development and expertise. Advanced teachers should theoretically be given greater allowances for creative activities and teaching methods than their novice counterparts. When districts persistently apply extremely specific criteria for classroom observation to teachers who have elevated the business of instruction to an "art," the "dynamics for improvement" are actually stifled. Different evaluation criteria and systems need to be applied to different levels of teachers, as well as to so-called "special teachers" (e.g., librarians, media specialists, school psychologists, counselors).

Administrative Evaluation. Legislative guidelines requires administrative evaluation systems which support and enhance teacher development. These systems have not generally received the attention which has been devoted to teacher evaluation, but they do warrant targeting in order to develop the most positive support for teacher development.

The project has observed some "significant" changes in superintendents and principals who have been willing to take an objective look at there administrative style and procedures. Greater emphasis should be placed on administrative evaluation, and those who are unable to develop the knowledge and skills to enhance teacher and student development should be reassigned.

Administrator Development and Leadership

Instructional leadership has consistently been one of the most important conditions necessary for effective schools. The wide variability in amount of district resources poses a tremendous hazard to the desirable objective of equitably apportioning the skill and time of leaders with respect to this important component. For example, administrators of small school districts which possess limited resources must assume two distinct sets of responsibilities. That is, they must function as the classroom or clinical supervisor in addition to carrying out the same types of non-instructional duties as their counterparts in larger, resource-rich districts. The district with greater resources can "afford" to remove mentors, teaching coaches and peer evaluators from the classroom for periods of time and replace them with efficient substitute instructors. Regardless of their respective levels of funding, small and rural districts experience extreme practical difficulties in freeing teachers to plan, develop, mentor and coach. This leaves the administrator with the sole responsibility for the important area of instructional leadership.

Administrative leaders have a very important role in development as fair and objective evaluators. Improvement in this area of concern should be a constant and cyclical part of continuation of the career ladder concept.

All of the identified elements of importance to effective schools hinge on the environmental setting. In other words, the "organizational climate" constitutes one of the most critical areas of focus of administrative leadership plans and activities. Research indicates that this area needs concerted attention if schools are to achieve lasting reform. Some school administrators need assistance in improving their knowledge and skills in interpersonal relations. Research can identify these areas of need for improvement, as well as assist with development and implementation of practical models for change.

FOCUS FACTORS

Teacher Effectiveness, Development and Leadership

The second most important "focus factor" in the career ladder model relates to the development of teacher competencies and the improvement of their performance. Teachers have changed and adjusted to societal and administrative desires for development and improvement in the past, and will undoubtedly continue to do so in the future. This behavior has been characteristic of reform movements in other states as well as in Arizona.

"Empowerment of teachers" comes about through focus on their development as instructional leaders. Of all of the interrelated components of the model, this particular area of the program has shown the greatest gains. Teachers have undergone extensive evaluation; they have developed portfolios, set content objectives and goals; and tangibly progressed in showing accountability for learning, through their increased professional application of procedures of student evaluation of achievement.

One of the most important factors related to effective schools deals with "efficient and systematic procedures of assessment of student progress." All career ladder districts need to proceed with plans for participating teachers to demonstrate tangible progress in attaining their instructional objectives. One especially workable approach involves establishing a baseline level of student achievement; specifying their instructional objectives; and obtaining a second measurement of students' performance upon execution of their teaching content and curriculum. By doing so, they can "pre- and post-test" the resultant learning gains, thereby effectively accounting for their professional responsibility for student achievement. This is the recommended way in which professionals can account for their responsibility for effecting student learning.

A study completed by a high-level career ladder teacher, which has been presented at a national conference, exemplifies the kinds of creative development which can have exceptional effect on moving toward instructional leadership and effective schools. As a result of her studies, an impressive theoretical model for mentoring, coaching and clinical supervision for improvement has been developed. This model should be reviewed by both new and continuing career ladder districts.

There are certain potential problems which can be avoided in continuing development of teacher instructional leaders. Study of the essential elements must not be conducted "in isolation." This is, in fact,

a major reason for the failure of past reform movements and of programs in other states. Assessment and development of other interrelated support factors is necessary for lasting improvement in teacher development.

Another difficulty relates to unrealistic, unscientific and unfair expectations of teacher influence upon student achievement. Models are available to assist teachers in the development of course objects, as well as methods of measuring and reporting significant gains with the students under their instructional responsibility. This important concept warrants special attention and will be discussed more thoroughly in the following section.

Student Achievement

The main focus factor and primary goal of the career ladder intervention project is the enhancement of student achievement. In order to attain true academic success, pupils at all levels must be associated with the "most powerful" learning environment possible; that is, one which positively develops individual potential. In other words, the inherent diversity of students should be explicitly recognized.

There will always be inequities in levels of development and achievement. Students come to schools from many different biological and social backgrounds which, in turn, determine the "readiness" to learn academic content. There are extreme diversities in intellectual capacities and the environment from which one comes. Examples of such differences include: (1) types of background experiences which relate to academic content issues; (2) family structures and nurturing procedures; (3) ethnicity and cultural uniquenesses; (4) health and vitality; (5) physical maturation; and (6) motivation to learn.

One of the greatest disasters in educational systems, in Arizona as well as in other states, is that "equity" is thought of as "making everyone the same" when it comes to levels of learning. This is a major cause for excessive student distress, dropouts and failure in our schools. The "system" must have a better understanding of "principles of human development" and the way in which they relate to a rational interpretation of equity.

In order to attain true equity, the state, district, schools and teachers must operate as a truly integrated system in order to maximize the academic development of children. Schools can do this only if they are allowed to establish their own test norms and are held accountable for improvement in student learning based on local district achievement, rather than inequitably and unfairly being compared to other districts or state and national norms.

For their part, districts need to do the following:

1. develop their own curricular objectives (based on the state curriculum); plan a variety of student assessment measures (i.e. criterion referenced, standardized, mastery, quantitative, qualitative); establish their own norms and account for improvement on a district wide basis;

2. allow teachers to develop their own course objectives (based on state and local curriculum); use a variety of student assessment measures (i.e. criterion referenced, standardized, mastery, quantitative, qualitative); and account for student learning through pre- and post-measures.

The research and evaluation project is conducting studies and assisting districts in establishing goals and procedures which will enhance professional accountability for student learning. State evaluators can best support this process by revising their traditional methods of assessment. More specifically, they need to abandon their propensity to test and compare diverse districts with a single set of widely available, standardized, but often inappropriate, yardsticks. Instead, they need to support, and recognize, the establishment of more relevant local procedures of accountability within each of the districts under their jurisdiction. The project has found that several districts are afraid to initiate improvements in this area. This is because they realize that the state may continue to tell them precisely what to do and how to do it rather than encouraging appropriate professional measures.

Districts, schools, teachers and students will fail to move ahead positively if they are inappropriately compared to others. Career ladder concepts allow for every element to be compared to its own past achievement, based on established criteria. Comparisons to established criteria, rather than to others, will allow greater improvement in achievement for more individuals.

ADDED SUPPORT FACTORS TIED TO ACHIEVEMENT

Academic Achievement, Social Problems and the Private Sector

Academic achievement has the best chance for rapid gains and improvement when students are socially, emotionally and physically healthy. There are many societal influences which cause children to be quite different in their social habits, emotional stability and physical prowesses, which in turn directly influence the rapidity and depth of the academic learning. These social background factors include differences in: (1) abusiveness of families; (2) drug-related environments; (3) pre- and post-natal care; and (4) nutritional background & habits. These factors cause psychological and emotional disturbances which must be dealt with before a teacher can realize measurable success, with correspondingly unrealistic expectations of student academic achievement.

Other social institutions, special teachers and private-sector programs need to be integrated into the model in order to have the greatest positive effect on the focus factor of improved student achievement.

Universities and Academic Achievement. Universities also have a key role in the support of the career ladder concepts. After all, they have their own faculty to improve, develop, and reward based on "merit." Furthermore, university faculty are responsible for their own students. The latter may include members of the following groups: teachers and other professionals; administrators; researchers; business officials; board members; and legislators.

Since universities are significantly interrelated with all the support and focus factors of the model which maps change and reform in education, they should be more highly integrated into the state direction and effort. The following are some suggested roles and goals for such explicit university involvement:

1. The Board of Regents should have a more direct association with the efforts of the JLCCL.
2. In addition, the Board of Regents could set goals and plans; restructure finances for assisting with research, assessment, development and improvement; and more directly meet district needs for continued program success.
3. The universities could plan for the development and improvement of education faculty. This could be accomplished by: a) collecting and accumulating evidence of what "schools are really like" from the practices of exemplary career ladder teachers and schools; b) requiring closer collaboration with districts through expanding already existing programs like the "Arizona Teacher Residency Program"; and/or c) establishing "Centers for Excellence in Education" which are more removed from the confines of the traditionalize university structure (akin to the medical model).

Conclusion

Architects, travelers and dress-makers follow designs, maps and patterns in order to reach their goals. A major reason for the apparent failure of past change and reform movements to show measurable progress in achieving their objectives is the corresponding failure of social systems to develop and adhere to a design which includes all of the interrelated and essential elements for success.

The Arizona legislature has developed such a comprehensive plan to improve teachers, the teaching profession and student achievement. They have set in motion the process by which a pattern for improvement can in fact be made operational. Considerable progress has been made to date in achieving the stated goals of the career ladders program; improvements and expansions continue to occur as well. Following legislative guidelines, districts have developed individual designs and structures; they are continuing to strive for improvement; teachers have been enhancing teaching skills and instructional leadership activities through mentoring and other related activities; establishing as a major goal, efficient and professional accountability for student achievement; and the essential interrelated elements for success have been identified and are being improved and cyclically evaluated.

The "Arizona Career Ladder Research & Evaluation Project" will continue to study, assess and assist with change needs in evaluating programs for improvement. Through this process, it is hoped that the project will have demonstrated the value of career ladder programs and whether they can provide an avenue to assuring effective schools. Ultimately, it will be well worth the effort if the results can help sustain lasting effects for future change and reform movements.

References

Agenda for the Joint Legislative Committee on Career Ladders. (1988, September 20). State Capitol, House Wing, Hearing Room 3, Phoenix, Arizona.

Bailey, L. (1988). The relationship between student achievement and levels of school effectiveness. A planned doctoral dissertation, Northern Arizona University, Flagstaff, Arizona.

Bierlein, L. A. (1986). The Arizona career ladder pilot project: Perceptions of teachers in participating districts toward performance-based teacher Evaluation Procedures. Unpublished doctoral dissertation, Northern Arizona University, Flagstaff, Arizona.

Career Ladder Pilot District Network Meeting Minutes. (1987-88) Committee Chair: Ms. Virginia Guy, Mesa Public Schools, Mesa, Arizona.

Dereshiwsky, M. I., and Packard, R. D. (1988, April). Predictive achievement model. Paper presented to the Career Ladder Steering Committee, Sunnyside School District, Tucson, Arizona.

Fimbres, E. (1988). The effects of the career ladder program and selected self-perceived teacher characteristics on student achievement. A planned doctoral dissertation, The University of Arizona, Tucson, Arizona.

Fritz, E. S. (1988). Change in administrative evaluation and training programs to support effective faculty development in career ladder districts. A planned doctoral dissertation, Northern Arizona University, Flagstaff, Arizona.

Fuller, L. (1988). Effects of teacher input, research bias and motivation base on organizational involvement in career ladder pilot-test districts. A planned doctoral dissertation, Northern Arizona University, Flagstaff, Arizona.

Helmstadter, G. C. (1987). An index of teacher effectiveness which is fair, objective and based on student performance. Paper presented to the Arizona Joint Legislative Committee on Career Ladders, Arizona State University, Tempe, Arizona.

Hunter, G. A. (1988). School district board support of teacher incentive programs. A planned doctoral dissertation, Northern Arizona University, Flagstaff, Arizona.

Karp, S. (1988, May). The effects of change on school climate: A case study of a career ladder innovation. A planned doctoral dissertation, Northern Arizona University, Flagstaff, Arizona.

Kundin, K. R. (1987). The Arizona career ladder project: Perceptions of educators and administrators year two of the pilot program. Unpublished doctoral dissertation, Arizona State University, Tempe, Arizona.

Morrison, L. (1988). A study of the relationship between organizational climate and effective schools. A planned doctoral dissertation, Northern Arizona University, Flagstaff, Arizona.

National Commission on Excellence in Education. (1983, April). A nation at risk: The imperative for educational reform. Washington, D. C.: U.S. Government Printing Office.

Nine, G. (1988). Measuring teacher effectiveness. A planned doctoral dissertation, Northern Arizona University, Flagstaff, Arizona.

Packard, R. D. & Flores, J. (1988). Social conditions for change and reform: What is Arizona like?. Unpublished Town Hall paper, Northern Arizona University, Flagstaff, Arizona.

Packard, R. D.; and Dereshiwsky, M. I. (1988, November 29) Quantitative levels of program acceptability by components and demographic conditions. Document presented to the Joint Legislative Committee on Career Ladders, Arizona State Capitol, House Wing, Phoenix, Arizona.

Packard, R. D., and Dereshiwsky, M. I. (1988, November 29) Quantitative levels of program acceptability by career ladder placement. Document presented to the Joint Legislative Committee on Career Ladders, Arizona State Capitol, House Wing, Phoenix, Arizona.

Packard, R. D., Dereshiwsky, M. I. & Bas/Isaac, E. (1988, November) An integrated model for the professional development of teacher leaders. Paper presented to the National Council of States, New Orleans. The Arizona Career Ladder Research & Evaluation Project, Center for Excellence in Education, Northern Arizona University, Flagstaff, Arizona.

Packard, R., Dereshiwsky, M., Gonzales, M. & Fimbres, E. (1988, November) Research findings on effective program designs: Evaluating state and local program impact on professional development and improved student outcomes. Paper presented to the National Council of States, New Orleans. The Arizona Career Ladder Research & Evaluation Project, Center for Excellence in Education, Northern Arizona University, Flagstaff, Arizona.

Packard, R. D., and Dereshiwsky, M. I. (1988, October) Forces of change and counter-change: A comprehensive school effectiveness program for enhanced teacher and student development. Document presented at the Arizona Education Association Leaders' Conference, Hyatt Regency, Phoenix, Arizona.

Packard, R. D., and Dereshiwsky, M. I. (1988, October) Program designs and structures. Document presented to the Joint Legislative Committee on Career Ladders, Arizona State Capitol, House Wing, Phoenix, Arizona.

Packard, R. D., and Dereshiwsky, M. I. (1988, April). Evaluation research: Study of the effects of a career ladder intervention program with focus on the production & outcomes in student achievement. Research document submitted to the Arizona Educational Research Association for the Conference on Partnerships in Education, Tucson, Arizona.

Packard, R. D. (1988, April). Research & evaluation: Preparation of the network task force decision package on research content and procedures. Document presented to the State Career Ladder Task Force Research Committee.

Packard, R. D. (1988, March). University & pilot career ladder district collaborative planning. Document presented to the Joint Legislative Committee on Career Ladders Research Staff and the "Network," Mesa Public Schools Administration Center, Mesa, Arizona.

Packard, R. D. (1988, January). Research questions for the development of components of an emerging career ladder program model. Document presented to the Career Ladder Pilot Network, Mesa Public Schools Administration Center, Mesa, Arizona.

Packard, R. D. & Bierlein, L. (in press). "Career ladder facts abstract and incentive programs for teachers: Will it work in Arizona?" Arizona Administrator Journal. (ERIC Document Reproduction Service No. ED 287 797.)

Packard, R. D. and Morrison, L. (1987). Analysis of the initial Arizona career ladder teacher incentive programs. Excellence in Teaching, 5 (No. 1), 4-6. (ERIC Document Reproduction Service No. ED 277 687.)

Packard, R. D. & Nichols, W. (1987, November). Qualitative analysis & results for the 1987 data cycle by career ladder program strengths & weaknesses. Research document presented to the Joint Legislative Committee on Career Ladder Programs, Arizona State Capitol, House Wing, Phoenix, Arizona. Published in The Arizona Career Ladder Pilot Project 1987 Annual Report, submitted by the Joint Legislative Committee on Career Ladders, Co-Chairs for the Thirty-eighth Legislature (1987-89): Senator Jacque Steiner and Representative Betty Rockwell, Project Director: Dr. Louann Bierlein, Arizona State Senate.

Packard, R. D. (1987, November). Outline of similarities & diversities in achieving performance targets & conditions of pilot test career ladder programs in the state of Arizona. Document presented to the Joint Legislative Committee on Career Ladders, Arizona State Capitol, House Wing, Phoenix, Arizona.

Packard, R. D. (1987, November). North Central Association evaluation of effective schools report. Document presented to Thunderbird High School, Glendale School District, Phoenix, Arizona.

Packard, R. D. (1987, November). Research & evaluation: 1987 results for a major pilot test career ladder teacher incentive & development program. Paper presented at the National Council of States, Twelfth Annual National Conference, San Diego, California. (ERIC Document Reproduction Service No. ED 288 878.)

Packard, R. D., Dereshiwsky, M., & Groenendal, J. (1987, November). Descriptive & analytical results for the 1986-87 career ladder data cycles. Research document presented to the Joint Legislative Committee on Career Ladder Programs, Arizona State Capitol, House Wing, Phoenix, Arizona.

Packard, R. D. & Fargo, S. (1987, November). Diversity of responses among ten Arizona pilot test district career ladder plans. Research document presented to the Joint Legislative Committee on Career Ladder Programs, Arizona State Capitol, House Wing, Phoenix, Arizona.

Packard, R. D. (1987, October). Executive summary: The 1986-87 pilot test career ladder project report. Document presented to the Joint Legislative Committee on Career Ladders, Arizona State Capitol, House Wing, Phoenix, Arizona.

Packard, R. D. (1987, October). Research & evaluation: 1987 preliminary report for the career ladder teacher incentive and development program. Document presented to the Joint Legislative Committee on Career Ladders, Arizona State Capitol, House Wing, Phoenix, Arizona.

Packard, R. D. (1987, July). Development of educational leaders: Fostering individual development of teachers for productivity and leadership roles in education. Paper presented at the World Assembly of the International Council on Education for teaching, Eindhoven, The Netherlands. (ERIC Document Reproduction Service No. ED 283 793.)

Packard, R. D. & Bierlein, L. (1987, January). Arizona career ladder research and evaluation project: Research and development for effective educational change and reform. Ann Arbor: The University of Michigan, Counseling and Personnel Services Clearing House, 2108 School of Education (ERIC Document Reproduction Service No. CG 019 609.)

Packard, R. D. & Bierlein, L. (1986, December). Research and evaluation of the Arizona pilot career ladder teacher incentive program. Report to the Joint Legislative Committee on Career Ladders, 1st Annual Research Report, Arizona House Wing, State Capital, Phoenix, Arizona.

Packard, R. D. (1986, November). A statewide pilot teacher incentive program: Research and development for policy change and reform. Paper presented at the National Council of States, Eleventh Annual National Conference, Hyatt Regency Hotel, Nashville, Tennessee. (ERIC Document Reproduction Service No. ED 275 654.)

Packard, R. D. (1986, Fall). Essential elements for assessment of system effectiveness in meeting faculty development needs. Accepted for publication in the Issues of Higher Education Journal, Kansas State University, Manhattan, Kansas.

Packard, R. D. (1986, August). The Arizona career ladder research and evaluation project. Paper presented to the Center for Excellence in Education Faculty Workshop, Northern Arizona University, Flagstaff, Arizona.

Packard, R. D., Pavlich, P., & Bierlein, L. (1986, July). The Arizona career ladder research and evaluation project fact sheet. Document prepared for general dissemination of education and other public sources, University News and Publications, Northern Arizona University, Flagstaff, Arizona.

Packard, R. D. (1986, July). Implications of career ladder teacher incentive programs. Paper presented at the 16th Resources Management Workshop, The Center for Excellence in Education, Northern Arizona University, Flagstaff, Arizona.

Packard, R. D. (1986, June). Teacher career development and incentive program outline of procedures. Paper presented to the Window Rock School District Steering Committee on Teacher Development, Center for Excellence in Education, Northern Arizona University, Flagstaff, Arizona.

Packard, R. D. (1986, May). A description and projection of the effects of the Center for Excellence in Education as it relates to career ladder teacher incentive programs on state and national educational policy. The first content interview by The Rand Corporation - in consortium with Rutgers University, The Eagleton Institute of Politics, and the Wisconsin Center for Education Research (five year study), Phoenix, Arizona.

Packard, R. D., Kunden, K., & Bierlein, L. (1986, April). Pilot test review for the Arizona career ladder perception assessment scale. Pilot test at The Kachina School, Peoria School District, Peoria, Arizona.

Packard, R. D. (1986, April). Thirteen psychological factors in assessment of system effectiveness in meeting faculty development needs. Paper presented at the National Conference on Faculty Evaluation and Development: Lessons Learned, Kansas City, Missouri.

Packard, R. D., Bierlein, L. , Aleamoni, L., & Helmstadter, G. C. (1986, March). Perception assessment scale. Research instrumentation developed by the Arizona Career Ladder Research and Evaluation Team to assess baseline data of Arizona Career Ladder Teacher Incentive Programs, State Capitol, Senate Wing, Phoenix, Arizona.

Packard, R. D., & Bierlein, L. (1986, February). Pilot test and analysis of the - 'Organizational Performance Assessment Scale.' Snowflake Unified School District, Snowflake, Arizona.

Packard, R. D. (1986, January). The Arizona career ladders research and evaluation project implementation plans. Ppocedures and assignments. Presentation to the first meeting of the combined pilot school districts, Grand Canyon College, Phoenix, Arizona.

Packard, R. D. (1986, January). Organizational performance assessment scale. Copyright Registration Number-TXu 226 869, United States Copyright Office, The Library of Congress, Washington, D.C.

Packard, R. D. (1985, December), (Nd). Developing and implementing a career ladder evaluation process: The Arizona project. Documentation copied and distributed by the National Association of Secondary School Principals, Washington, D.C., Inservice Program for Administrators Conference, Tucson, Arizona.

Packard, R. D. (1985, August). Determining administrative effectiveness in managing human resources for development and productivity. Paper presented at the Center for Excellence in Education Resources Management Symposium, Northern Arizona University, Flagstaff, Arizona.

Packard, R. D. (1985). Arizona career ladders program evaluation design. Paper on research and evaluation design presented to the Arizona Joint Legislative Subcommittee on Career Ladders, State Capitol, House Wing, Phoenix, Arizona.

Packard, R. D. (1985). The Art of Administration (Revised). Arizona Humanities Association Journal, VI (4), 38-43. (ERIC Clearinghouse on Higher Education, February 1987-Document Reproduction Service No. ED 274 268.)

Packard, R. D. (1985). The art of administration. Arizona Humanities Association Journal, VI(4), 38-43.

Packard, R. D. (1984, December). Sabbatical report. Document presented to Northern Arizona University, Flagstaff, Arizona.

Packard, R. D. (1984, December). Human development: The art of administration. Paper presented at the annual Arizona Alliance for the Arts Conference (Humanities Division), Tucson, Arizona.

Report of the Governor's Committee on Quality Education. (1983, November). Education in Arizona: Popular concerns unpopular choices. Governor's Office, State of Arizona, Honorable Bruce Babbitt, Governor.

Report of the Govenor's Task Force on Teacher Education. (1984, June). Teacher education in Arizona: Evolution or revolution. Governor's Office, State of Arizona, Honorable Bruce Babbitt, Governor.

Report by the Commission to Study the Quality of Education in Arizona. (1987, July). Commitment to quality education: Arizona's top priority. Arizona Department of Education, C. Diane Bishop, Superintendent.

Report on statewide expansion of the career ladder program. (1988, March). Document prepared by the Career Ladder Pilot District Network, (Task Force Chair: Mark Pope-Rolewski, Amphitheater Public Schools, Tucson, Arizona.

Report on statewide expansion of the career ladder program. (1988, May). Task Force Chair: Mark Pope-Rolewsky, Amphitheater Public Schools, Tucson, Arizona.

Silberman, Charles E. (1971). Crisis in the classroom: The remaking of American education. New York: Vintage Books, A Division of Random House.

Thomas, J. L. (1987, November). The Arizona career ladder Project: Perceptions of teachers in participating districts toward performance-based teacher evaluation procedures. Unpublished doctoral dissertation, Northern Arizona University, Flagstaff, Arizona.

Research in Progress

Packard, R. D., and Dereshiwsky, M. I. (1988/1989) A reliability assessment of the subscales of the 1988 perception assessment scale survey. A research document in process.

Packard, R. D., and Dereshiwsky, M. I. (1988/1989) A factor analysis of the subscales of the 1988 perception assessment scale survey. A research document in process.

Packard, R. D., and Dereshiwsky, M. I. (1988/1989) Demographic subgroup difference testing: Summated scale scores derived from the 1988 perception assessment scale survey. A research document in process.

Packard, R. D., and Dereshiwsky, M. I. (1988/1989) A profile analysis of selected demographic variables and attitudinal components of the 1988 perception assessment scale survey. A research document in process.

Packard, R. D., and Dereshiwsky, M. I. (1988/1989) Qualitative Research Analysis by Career Ladder District. A research document in process.